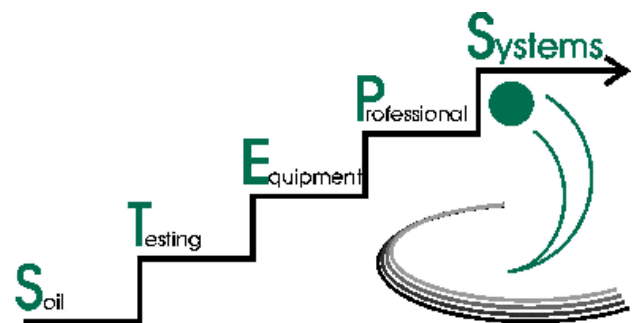


User manual short version



Grain special fruit moisture meter

humimeter FS4



STEP Systems GmbH
Soil Testing Equipment - Professional Systems
Duisburger Str. 44
D-90451 Nürnberg

Tel: 0049 (0) 911-96 26 05-0
Fax 0049 (0) 911-96 26 05-9
e-Mail: info@stepsystems.de
Internet: www.stepsystems.de

User manual short version

1. Place the empty provided cup (0.5 litre) on the scale and turn the scale on. It shows 0.0 gram.




2. Fill up the cup with the sample material (+/- 1.0g). The fill quantity is shown on the upper left corner on the display of the humimeter FS4.



3. Make sure that the measuring chamber is completely empty. It is important that no material is left in the measuring chamber when you turn on the device.


4. Switch on the humimeter FS4 by pressing the power button () for 3 sec.





5. As the next step, please do the self calibration. The word “calibrate” will show up on your display. Accept by pressing the  button.



6. In case a menu point is shown, press the

left button () until you reach the measuring window.

7. Select the right calibration curve for your material under test using the buttons  or .








8. Fill up the measuring device with the sample material. The filling needs to be done slowly and constantly to ensure reproducible results.




9. The display shows the measuring result.



10. To save the results in the stor menu press the  ( button). The storage was successful when the number in front of the symbol  increased. To reach the store menu please press () until the  appears.



11. To name the saved results press the  button.

12. Empty the humimeter and ensure that no grain rests are accumulated in the measuring chamber.



Calibration curves












Name of Calibration curve	Material under test	Fill quantity
300g corn stand.	corn standard	300g
300g corn hand	corn hand reaped	300g
300g rye	rye	300g
300g triticale	triticales	300g
300g whea/spe.pe	wheat / spelt peeled	300g
300g barley	barley	300g
190g oats	oats	190g
300g rape	rape	300g
230g pumpkin	pumpkin seed	230g
310g peas	peas	310g
300g soybean	soybean	300g
277g beetle beans	beetle bean	277g
295g horse bean	horse bean	295g
180g sunflower	sunflower seed	180g
300g rice peeled	rice peeled	300g
285g raw.cof.pee	raw coffee peeled	285g
180g raw.cof.unp	raw coffee unpeeled	180g
150g coffee kib.	coffee kibbled	150g
160g coffee roa	coffee roastet	160g
300g poppy	poppy	300g
reference	-----	-----

- Reference: To test the humimeter FS4. Do not use for measuring the moisture!
- There are another 10 empty calibration curves stored in the measurement device. These can be used from the customers for special fruits or variety calibration.

Menu

There are 4 menu levels.

The symbols show the key functions in the different menus.

1. Type Selection :    
2. Store Menu :    
3. Additional level:   
4. Main menu:

 Edit Logs

 Manual Logs

 Clear Logs

 Print Logs

 Last Log

 All Logs

 Clear

 Send Logs

 Manual Logs

 Clear Logs

 Options

 Date / Time

 Log Time

 Language

 Unlock

 °C / °F

 Userlevel

 Backlight ON time

 Auto OFF time

 Materialcalib.

 Online Send









 Online Print

 Password













 Reset

Keypad symbols

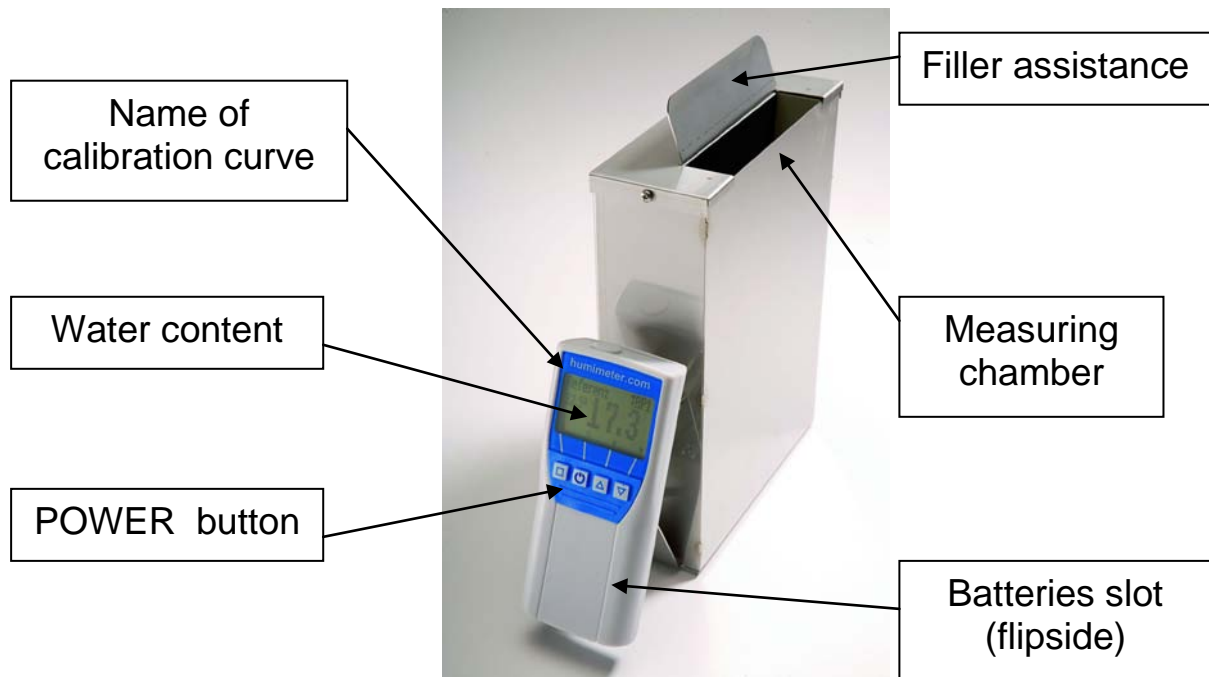
Measuring window:

-  : Rolling Menu
-  : Power ON / OFF
-  : Switch upper
-  : Switch lower
-  : Save
-  : Hold
-  : Watch the measuring rows
-  : Suppliers data can be added

Menu:

-  : Enter
-  : Switch upper
-  : Switch lower
-  : Exit
-  : Enter numbers
-  : Enter letters
-  : Next or right
-  : Left
-  : Yes
-  : No
-  : Shift
-  : OK

Design of the device



! IMPORTANT ! please read

Most common reasons for miss readings

- ***Product temperature out of application range***

Material **below 0°C** resp. **above 40°C** (32 to 104 °F) may causes faulty measurements. The storage of cold material in a warm storage area usually creates condensed water which may lead to major measuring errors.

- ***Not adjusted material***

Let your humimeter FS4 adjust to the surrounding temperature of the material for approx. half an hour.

A very high temperature difference has a negative effect on the stability of the measurement result.

- ***Wrong calibration curve***

Before you measure your sample, doublecheck the correct selection of the calibration curve.

- ***Wrong fill quantity***

Fill exactly the right weight (± 1.0 g) in the measuring chamber.

- ***Wet or mouldy material***

- **Frozen measuring material.**

Changing batteries

Your new device is provided with batteries.

Changes the batteries:

- 1.) Press with your finger onto the arrow of the batterie cap und pull it back.
- 2.) Remove the empty batteries.
- 3.) Put four new batteries in the device. Make sure the position of the battery poles is correct.
- 4.) Press down the batteries and close the cap.



Determination of the material moisture

The principle is a comparison measurement with the drying out method according to DIN 10350: 1967 09. Take the measured sample and weigh it. Dry it out in an oven and weigh it again. Following formula can be taken to determine the absolute moisture:

Note! The dried material may not be used any more for measuring purposes!

$$\% F = \frac{M_n - M_t}{M_n} \times 100$$

M_n : Mass with average moisture content

M_t : Mass of the dried sample

%F: Calculated absolute moisture

Exemption from liability

For miss-readings and wrong measurements and of this resulting damage we refuse any liability. This is a device for quick determination of moisture. The moisture depends on multiple conditions and multiple materials. Therefore we recommend a plausibility check of the measuring results. Each device includes a serial number and the guarantee stamp. If those are broken, no claims for guarantee can be made.

Technical data

Resolution of the display	0.1% water content 0.5°C temperature
Measuring range	5 up to 50 % depending on the material
Operation temperature	0°C up to 40°C
Storage temperature	-20°C up to 60°C
Temperature compensation	Automatically
Power supply	4 pcs. 1.5Volt AA <u>Alkaline</u> batteries (1800 measurements)
Auto Switch OFF	After app.6 minutes (adjustable)
Current consumption	55 mA (with light)
Display	128 x 64 matrix display, lighted
Dimensions	260 x 70 x 250 mm
Weight	app. 1.3 kg (with batteries)
Degree of protection	IP 40
Scope of supply	Plastic case Digital scale 1000g Measuring cup 0.5 litre 4 x 1.5Volt AA Alkaline Batteries Software LogMemorizer